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# SCIENCES



1976-77  
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*West Virginia University Medical Center*

WEST VIRGINIA UNIVERSITY BULLETIN

Series 76, No. 11-6, May 1976

Second Class Matter

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Morgantown, WV 26506



# SCHOOL OF DENTISTRY

The School of Dentistry was established by an act of the West Virginia Legislature on March 9, 1951, and the first class began studies in September, 1957. The twenty-three members of that class were graduated in 1961, receiving the first dental degrees awarded in West Virginia. More than two hundred students are now enrolled in the accredited dental program. In September, 1961, the first students were enrolled in the school's degree program in dental hygiene and were graduated in 1965.

The profession of dentistry offers many career opportunities. In addition to the general practice of dentistry, specialty practice areas may be pursued by further study. The fields of dental education and research provide the opportunity for satisfying and interesting careers. Dental auxiliary careers such as dental hygiene may be pursued. Men and women entering the dental health care delivery system find that they play an important role in the exciting and challenging world of the modern health sciences.

The School of Dentistry of West Virginia University offers programs of education leading to the degrees of Doctor of Dental Surgery, Master of Science with a major in Orthodontics, and Bachelor of Science in Dental Hygiene. (See Dental Hygiene in the *WVU Undergraduate Catalog*.) One oral surgery internship and two oral surgery residencies are offered by the Department of Oral Surgery. Programs leading to the Master of Science and Doctor of Philosophy degrees are available in the associated basic sciences. Three general practice residencies are offered by the School of Dentistry and University Hospital. Continuing education courses for dentists and auxiliaries are offered throughout the year on a wide variety of dental topics.

Administration of the School of Dentistry is the responsibility of the Dean. He is aided in this function by an associate dean, two assistant deans, and the clinical and basic sciences chairpersons. This administrative group, the Faculty Council, serves in an advisory capacity to the Dean in carrying out the established policies of the School of Dentistry and of WVU.

## Faculty

John D. Adams, D.D.S. (U. Pitt.), *Professor and Chairman of Fixed Prosthodontics.*

Camillo A. Alberico, D.D.S. (Marquette U.), *Assistant Dean; Professor and Chairman of Endodontics.*

Frank S. Balaban, D.D.S. (WVU), *Instructor in Endodontics.*

Henry J. Bianco, D.D.S. (U. Md.), *Professor and Chairman of Prosthodontics.*

W. Robert Biddington, D.D.S. (U. Md.), *Dean; Professor of Endodontics.*

Mary Lynn Bogard, B.S. (WVU), *Instructor in Dental Hygiene.*

Jerry E. Bouquot, D.D.S. (U. Minn.), *Assistant Professor of Oral Pathology.*

Dale C. Bowers, D.D.S. (Ohio St.), *Assistant Professor of Oral Diagnosis and Roentgenology.*

Emmett F. Brown, D.D.S. (U. Pitt.), *Professor of Dental Auxiliary Utilization.*

John L. Campbell, D.D.S. (Ind. U.), *Professor and Chairman of Oral Surgery.*

James J. Caveney, D.D.S. (WVU), *Visiting Lecturer in Orthodontics.*

Minter L. Chapman, D.D.S. (WVU), *Assistant Professor (part-time) of Operative Dentistry.*

Geoffrey W. Christian, D.D.S. (WVU), *Instructor (part-time) in Prosthodontics.*

Donald Davidson, D.D.S. (U. Buffalo), *Special Lecturer in Oral Surgery.*

Leo DeCounter, D.D.S. (U. Iowa), *Associate Professor of Prosthodontics.*

John Dempsey, D.D.S. (U. Md.), *Assistant Professor (part-time) of Orthodontics.*

Adelmo DiNapoli, D.D.S. (Ohio St. U.), *Special Lecturer in Prosthodontics.*

L. Edward Eckley, D.D.S. (WVU), *Visiting Lecturer in Orthodontics.*

Patrick Farace, D.D.S. (Northwestern U.), *Associate Professor of Operative Dentistry.*

James R. Foor, D.D.S. (WVU), *Instructor in Operative Dentistry.*

John W. Frye, D.D.S. (WVU), *Assistant Professor (part-time) of Operative Dentistry.*

Lawrence Gaston, D.D.S. (WVU), *Assistant Professor of Orthodontics.*

Calvin Gaver, D.D.S. (U. Md.), *Associate Professor of Operative Dentistry.*

John E. Glover, D.D.S. (WVU), *Instructor (part-time) in Prosthodontics.*

William L. Graham, D.D.S. (U. Md.), *Assistant Dean; Professor and Chairman of Oral Diagnosis and Roentgenology.*

Catherine Graves, B.S. (U. Buffalo), *Instructor in Dental Hygiene.*

Robert W. Graves, D.D.S. (WVU), *Associate Professor of Oral Surgery.*

James A. Griffin, D.D.S. (Baylor U.), *Associate Professor of Endodontics.*

Geoffrey Gwynn, D.D.S. (WVU), *Instructor (part-time) in Pedodontics.*

George Harper, D.D.S. (WVU), *Instructor in Prosthodontics.*

John M. Holovak, D.D.S. (WVU), *Instructor in Prosthodontics.*

Mary Beiswenger Holovak, B.S. (U. Buffalo), *Instructor in Dental Hygiene.*

Janice Huetter, D.D.S. (U. Detroit), *Instructor in Periodontics.*

William G. Hutchinson, D.M.D. (U. Ore.), *Professor of Operative Dentistry.*

Charles R. Jackson, D.D.S. (WVU), *Instructor in Operative Dentistry.*

David C. Johnsen, D.D.S. (U. Mich.), *Assistant Professor of Pedodontics.*

Richard Kelly, D.D.S. (WVU), *Instructor (part-time) in Operative Dentistry.*

Darryl R. King, D.D.S. (WVU), *Assistant Professor (part-time) of Oral Surgery.*

Edwin Kluth, D.D.S. (Case W.U.), *Assistant Professor of Prosthodontics.*

Stephen Kwiatkowski, D.D.S. (WVU), *Assistant Professor of Crown and Bridge Dentistry.*

Ernest R. Lalonde, D.D.S. (U. Buffalo), *Coordinator and Associate Professor of Oral Pathology.*

Robert Layman, D.D.S. (WVU), *Instructor in Operative Dentistry.*

Clarence R. McCurdy, D.D.S. (WVU), *Associate Professor of Crown and Bridge Dentistry.*

William R. McCutcheon, D.D.S. (WVU), *Associate Professor of Public Health Dentistry.*

Hubert E. Martin, D.D.S. (U. Pitt.), *Assistant Professor (part-time) of Orthodontics.*

Thomas J. Martin, D.D.S. (Va. C. U.), *Assistant Professor of Oral Diagnosis and Roentgenology.*

William W. Merow, D.D.S. (U. Md.), *Professor and Chairman of Orthodontics.*

Carolyn Miller, B.S. (WVU), *Instructor in Dental Hygiene.*

William Morris, L.L.D. (U. Ill.), *Special Lecturer in Dental Jurisprudence.*

Donald Morrison, D.D.S. (U. Iowa), *Associate Professor and Chairman of Periodontics.*

David Nash, D.M.D. (U. Ky.), *Associate Professor and Chairman of Pedodontics.*

Gary Naylor, D.D.S. (WVU), *Instructor (part-time) in Operative Dentistry.*

Franklin Oliverio, D.D.S. (U. Md.), *Assistant Professor (part-time) of Oral Surgery.*

James E. Overberger, D.D.S. (U. Pitt.), *Associate Dean; Professor of Dental Materials.*

Daniel E. Pickle, D.D.S. (U. Ill.), *Assistant Professor of Periodontics.*

Daniel L. Pinson, D.D.S. (WVU), *Clinical Instructor (part-time) in Endodontics.*

William G. Pringle, D.D.S. (WVU), *Assistant Professor (part-time) of Orthodontics.*

David T. Puderbaugh, D.D.S. (WVU), *Associate Professor of Dental Auxiliary Utilization.*

Charles C. Quarles, D.D.S. (WVU), *Instructor in Operative Dentistry.*

Nancy V. Ramsey, M.S. (U. Mich.), *Director and Associate Professor of Dental Hygiene.*

Harold H. Reed, D.D.S. (WVU), *Assistant Professor (part-time) of Operative Dentistry.*

John Ruby, D.D.S. (U. Penn.), *Assistant Professor (part-time) of Pedodontics.*

Robert E. Sausen, D.D.S. (U. Minn.), *Professor and Chairman of Operative Dentistry.*

Ann Shoaf, B.S. (WVU), *Assistant Professor of Dental Hygiene.*  
 Fred S. Schindler, D.D.S. (WVU), *Visiting Lecturer in Orthodontics.*  
 Earle Schultz, D.D.S. (U. Md.), *Associate Professor of Pedodontics.*  
 Clifford J. Shuman, D.D.S. (WVU), *Assistant Professor (part-time) of Endodontics.*  
 A. Eddy Skidmore, D.D.S. (WVU), *Associate Professor of Endodontics.*  
 Homer Smith, D.D.S. (WVU), *Assistant Professor of Oral Diagnosis.*  
 Keith Smith, D.D.S. (WVU), *Instructor in Crown and Bridge Dentistry.*  
 Charles Somers, D.D.S. (Loyola U.), *Professor of Prosthodontics.*  
 James G. Thomas, D.D.S. (Temple U.), *Associate Professor of Oral Diagnosis and Roentgenology.*  
 Harold E. Tucker, D.D.S. (Va. C. U.), *Associate Professor of Crown and Bridge Dentistry.*  
 Alfred VanRiper, D.D.S. (WVU), *Associate Professor (part-time) of Prosthodontics.*  
 David H. Walker, D.D.S. (WVU), *Instructor in Dental Auxiliary Utilization.*  
 David A. Wallace, D.D.S. (WVU), *Special Lecturer in Oral Surgery.*  
 Robert Wanker, D.D.S. (WVU), *Instructor (part-time) in Periodontics.*  
 Bill W. Weaver, D.D.S. (Ohio St.), *Assistant Professor of Operative Dentistry.*  
 John T. Welch, D.D.S. (U. Md.), *Professor of Oral Surgery.*  
 John B. Wilfong, D.D.S. (WVU), *Assistant Professor (part-time) of Orthodontics.*

## DOCTOR OF DENTAL SURGERY PROGRAM

The School of Dentistry offers a program of education leading to the degree of Doctor of Dental Surgery (D.D.S.). The requirements for admission and the curriculum conform to the standards established by the American Dental Association Commission on Accreditation of Dental and Dental Auxiliary Educational Programs.

### Admission

The School of Dentistry participates in the American Association of Dental Schools Application Service. All applications are processed by that organization. Application request cards and additional required materials are available at the Office of Admissions and Records, 1170 Basic Sciences Building, WVU Medical Center, Morgantown, WV 26506.

Because of the large number of applicants and limited openings available, preference in admissions is given to qualified West Virginians although outstanding nonresident applicants will be considered. Nonresident applicants should have a grade-point average of 3.0 or above and an average score on the Academic and PMAT sections of the Dental Admission Test of at least 4-4. Careful consideration is given to those personal qualifications which bear upon fitness of applicants for the study and practice of the profession. Economically or culturally disadvantaged students (especially if they are state residents) are encouraged to apply. Applications from women also are encouraged.

Application for admission in the Fall, 1977, should be made promptly upon completion of the 1975-76 school year, even if the applicant has not completed all the requirements as listed. Final acceptance of a student is contingent upon satisfactory completion of all requirements. The deadline for supplemental materials is Dec. 1, 1976. Applications must be submitted to the American Association of Dental Schools Application Service by Nov. 1, 1976, so that all required supplemental materials may be received by WVU by the Dec. 1, 1976, deadline. Applicants not filing early, as well as applicants who do not have *all* of the necessary credentials (e.g. DAT scores, final transcripts, and letters of recommendation) at the time of applying for admission, lessen their opportunity for ac-

ceptance since the Admissions Committee begins its consideration of candidates as soon as applications are received.

Each applicant is required to satisfactorily complete the Dental Admission Test. It is suggested that the test be taken in April, 1976, before making application in June, 1976, for admission in the Fall of 1977. Other testing periods are acceptable. This test is given at testing centers throughout the United States and its possessions, and in Canada. Application cards may be secured by writing to: Division of Testing, Council on Dental Education, 211 E. Chicago Ave., Chicago, IL 60611.

Applicants for admission must present evidence of having successfully completed three or more academic years of work in liberal arts in an accredited college. The prerequisite courses should include:

	<i>Sem. Hr.</i>
English Composition and Rhetoric or equivalent .....	6
Zoology or Biology (with laboratory) .....	8
Inorganic Chemistry (with laboratory) .....	8
Organic Chemistry (with laboratory) .....	8
Physics (with laboratory) .....	8

Courses in comparative anatomy, embryology, and biochemistry are strongly recommended. In addition, courses in the humanities and the social sciences are suggested in order to acquire a broadened intellectual background for both the study and practice of dentistry.

Applicants who have complied with all preliminary requirements for admission are required to appear for a personal interview. The Committee on Admissions will advise the applicants of the time and place of the interview.

Admission to the WVU School of Dentistry is contingent upon satisfactory completion of all admission requirements as stated above, appropriate completion of all application instructions, submission of all transcripts from each college attended and satisfactory completion of all courses taken before the time of registration in dental school (includes courses taken during the summer session immediately preceding admission).

Good physical and mental health are essential for the successful study and practice of dentistry. Good eyesight is particularly important. The applicant admitted to the School of Dentistry must present, on or before the day of enrollment, a certificate from an examining doctor stating the condition of the applicant's eyes. If any correctible defects in vision exist, evidence shall be presented to show that proper corrections have been made: All students are required to have protective glasses in performing clinical and/or dental laboratory procedures. Students who wear corrective glasses will meet the safety requirements, but those students who do not require correction should be fitted by an ophthalmologist, optometrist, or optician with safety or non-corrective glasses. Safety shield glasses or goggles are not acceptable.

It is required that during the first semester of the first year all students must complete certain prescribed immunization and diagnostic procedures.

## Promotion

At the close of the school year, the status of each student is reviewed by the appropriate academic standards committee, which then reports to the Dean and the Faculty Council. The committee may recommend that a student be promoted unconditionally, be promoted on probation, be allowed to make up

deficiencies, be given the opportunity to repeat a year, or be suspended from further studies in the School of Dentistry. Final disposition in each case is the prerogative of the Dean and the Faculty Council.

Unconditional promotion normally depends upon the fulfillment of all course requirements, and the attainment of certain minimum standards of academic achievement. These requirements provide for a minimum grade-point average of 1.5 for promotion to the second year; for a minimum cumulative grade-point average of 1.75 for promotion to the third year; for a minimum cumulative grade-point average of 2.0 for promotion to the fourth year; and for a cumulative grade-point average of 2.0 for graduation. Outstanding students may be considered for graduation upon completion of the third summer session.

## **Requirements for Degree**

Candidates for graduation are recommended by the faculty of the School of Dentistry to the Board of Regents for its approval and for the conferring of the degree of Doctor of Dental Surgery, provided they meet fully the following conditions:

1. Shall have been in regular attendance in the School of Dentistry for the academic period prescribed for each student.

2. Shall have completed the prescribed curriculum for each of the academic sessions.

3. Shall have shown good moral character and shall have demonstrated a sense of professional responsibility in the performance of all assignments as a student.

4. Shall have met in full all financial obligations to the University.

Attendance at the spring Commencement is voluntary. If you don't plan to attend, leave the complete mailing address to where you want your diploma mailed at the Dean's office.

## **Curriculum**

The continual change in the social, economic, and educational structure of our society has led to an acute awareness of personal health needs. Foremost among these changes are population increase, rapidity of communication, and increased life expectancies.

The School of Dentistry recognizes its obligation to produce professionals capable of meeting the dental health needs of society and providing leadership for the dental profession. Therefore, the school offers a curriculum that will provide students with a learning environment in which to develop the technical competence, intellectual capability, and professional responsibility necessary to meet the dental health needs of a society in a state of constant transformation. In order to insure the achievement of these goals, the dental curriculum is continually reviewed and revised.

The basic required courses are presented during the first six semesters and three eight-week summer sessions (three calendar years). The student has the opportunity in the second semester of the first year for early experience to patient oriented instruction through the introduction to preventive dentistry, community health, oral diagnostic techniques, and the concepts of comprehensive dental care. Student progress is constantly evaluated. Upon

## SCHOOL OF DENTISTRY CURRICULUM PLAN

	First Year (1,200 hr.)	Summer Session (320 hr.)	Second Year (1,200 hr.)	Summer Session (320 hr.)	Third Year (1,200 hr.)	Summer Session (320 hr.)	Fourth Year (1,200 hr.)
100	Basic Biologic Science	Basic Dental Science	Basic Biologic Science	Basic Dental Science	Basic Biologic Science	Bio-Clin.Sci. P.D. & C.H.	Electives and Clinical Dentistry
				Bio-Clinical Sciences	Bio- Clinical Sciences	Clinical Dentistry	
				P.D. & C.H.			
				Clinical Dentistry			
200							
300							
400							
500	Basic Dental Science		Basic Dental Science		Prev.Dent.& Comm.Hlth.	Unscheduled Time	
600	Basic Dental Science		Bio- Clinical Sciences		Clinical Dentistry		
700							
800							
900	Bio-Clinical Sciences		Prev.Dent.& Comm.Hlth.				
1,000	Prev.Dent.& Comm.Hlth.		Clinical Dentistry				Unscheduled Time
	Clinical Dentistry						
	Unscheduled Time		Unscheduled Time		Unscheduled Time		
1,200							

## SCHOOL OF DENTISTRY COURSE SCHEDULE

	First Semester	Second Semester	Summer
<b>FIRST YEAR</b>			
300 — Anesthesiology			x
303 — Oral Diagnostic Techniques		x	
304 — Operative Dentistry (1)		x	
305 — Biochemistry		x	
306 — Cross Anatomy (Trunk & Extremities)	x		
307 — Cross Anatomy of Head and Neck Neuroanatomy		x	
309 — Microanatomy and Organology	x		
310 — Dental Anatomy and Occlusion	x		
311 — Periodontics (1)			x
312 — Dental Materials	x		
313 — Removable Prosthodontics (1)	x		
314 — Fixed Prosthodontics (1)			x
315 — Prev. Dent. and Comm. Health (1)	x	x	
316 — Removable Prosthodontics (2)			x
318 — Oral Histology and Embryology		x	
320 — Prev. Dent. and Comm. Health (2)		x	
321 — Endodontics (1)			x
322 — Operative Dentistry (2)			x
323 — Clinic Orientation			x
<b>SECOND YEAR</b>			
302 — Microbiology	x		
325 — Auxiliary Utilization (1)		x	x
327 — Oral Roentgenology	x		
328 — General Pathology	x		
329 — Operative Dentistry	x	x	
330 — Prev. Dent. and Comm. Health (3)		x	
332 — Prev. Dent. and Comm. Health (4)			x
333 — Physical Diagnosis		x	
334 — Removal Prosthodontics (3)		x	
335 — Pedodontics (1)	x	x	x
336 — Fixed Prosthodontics (2)	x	x	
337 — Oral Diagnosis (1)		x	x
338 — Oral Pathology		x	
339 — Oral Surgery (1)		x	x
340 — Periodontics (2)	x	x	x
341 — Removable Prosthodontics (4)			x
342 — Endodontics (2)		x	x
343 — Fundamentals of Physiology	x		
345 — Principles of Orthodontics		x	
346 — Orthodontics Technics			x
348 — Operative Dentistry (4)			x
<b>THIRD YEAR</b>			
350 — Removable Prosthodontics (5)	x	x	
352 — Prev. Dent. and Comm. Health (5)	x	x	
353 — Oral Oncology	x		
354 — Prev. Dent. and Comm. Health (6)			x
355 — Clinical Path. Correlation Conference		x	
357 — Fixed Prosthodontics (3)	x	x	x
358 — Operative Dentistry (5)	x	x	x
359 — Oral Surgery (2)	x	x	x
360 — Pharmacology	x		
361 — Pedodontics (3)	x	x	x
362 — Endodontics (3)	x	x	x
363 — Periodontics (3)	x	x	x
364 — Oral Diagnosis (2)	x	x	x
365 — Clinical Orthodontics (1)	x	x	x
367 — Clinical Oral Roentgenology (1)	x		x
371 — Auxiliary Utilization (2)	x	x	x
374 — Principles of Medicine	x		
<b>FOURTH YEAR</b>			
375 — Auxiliary Utilization	x	x	
376 — Removable Prosthodontics	x	x	
377 — Periodontics	x	x	
380 — Endodontics	x	x	
382 — Clinic — Pathologic Correlation Conference	x	x	
383 — Operative Dentistry	x	x	
384 — Oral Surgery	x	x	
385 — Clinical Orthodontics	x	x	
386 — Pedodontics	x	x	
387 — Oral Diagnosis	x	x	
389 — Fixed Prosthodontics	x	x	
394 — Prev. Dent. and Comm. Health*	x	x	
396 — Clinical Oral Roentgenology	x	x	
397 — Special Topics*	x	x	

\*See Courses of Instruction in Dentistry.

completion of the second semester of the third year of the program, the progress of all students is thoroughly reviewed by the faculty and individual curriculums for completion of the program are designed for each student. It is recognized that dental students have a wide variety of interests and backgrounds. To stimulate, motivate, and satisfy these interests, elective opportunities are offered in the first and second semesters of the fourth year of the curriculum. The number of required hours during the fourth year including electives may vary with each student depending on the individual student's progress at the completion of the third summer session and/or first semester of the fourth year. Students must complete satisfactorily all courses attempted.

## Dental Clinic

Clinical training and experience constitute a major part of the curriculum for dental and dental hygiene students. Facilities for dental and dental hygiene students include 160 treatment cubicles and all necessary related laboratories. Patients are accepted for treatment if their dental problems are of teaching value and if a student is available for assignment. The student assigned to each patient must work under close supervision of a faculty member. The clinic program provides practical experience for the student and renders a much needed service to several thousand patients annually.

## Books and Instruments

Dental students are required to obtain necessary textbooks for the scheduled courses and special instruments for use in the various laboratories and clinics. Lists of approved instruments and books will be provided at the time of registration, and these supplies will be made available through University services. Official authorization is essential in the purchase of all instruments and books used in dental courses.

## Student Loan Funds and Scholarships

In addition to unrestricted loan funds, available through the Office of Student Financial Aids, certain funds have been dedicated for the use of dental students or for students enrolled in programs of the School of Dentistry.

*Oscar W. Burdats Dental Student Revolving Loan Fund.* In 1955, friends of Oscar W. Burdats in the Wheeling area established a student loan fund for dental students in recognition of Dr. Burdats' outstanding leadership in the dental profession for more than sixty years. The fund is used for loans to worthy dental students who are residents of West Virginia.

*American Fund for Dental Health Loan Program.* These loans are made through the Office of Student Financial Aids. Any student in good standing is eligible to borrow from this fund.

*Dental School Loan Fund.* A generous contribution, made by the Auxiliary of the West Virginia State Dental Society in 1959, initiated a loan fund for students in programs under the administration of the School of Dentistry. Either short-term or long-term loans may be made, depending upon the student's need and eligibility.

*Dentistry Fund — West Virginia University Foundation, Inc.* Loans to students under the administration of the School of Dentistry may be made from a special fund within the Foundation. Contributions from the West Virginia State Dental Society, the West Virginia Federation of Women's Clubs,



Junior Department, and from Dr. D. A. Farnsworth in memory of his brother, Dr. F. M. Farnsworth, were used initially to establish the principal of this fund.

*Health Professions Student Loan Program.* The School of Dentistry participates in the federal loan program approved under the Health Manpower Act of 1971.

*Other restricted loan opportunities.* The American Dental Trade Association annually provides loan opportunities to third and fourth year students in dental schools of the United States and Canada. Third and fourth year women dental students also are eligible for loans from the Association of American Women Dentists.

The following scholarships are available for dental students:

*Board of Regents Dental Scholarships.* Twenty scholarships are available. The Board of Regents scholarships, divided equally between the four dental classes, provide for the payment of the recipients' tuition and registration fees. To be eligible, applicants must have been enrolled or admitted to the School of Dentistry and must rank above the fiftieth percentile of their class. In the case of entering freshmen, distinct professional promise, as indicated by performance on the Dental Admissions Test, also is used as a criterion for selection. Scholarships are awarded annually. Continuation beyond one semester, however, is assured only if a recipient maintains an academic position in the upper 50 percent of the class (unless probationary status is recommended by the Supervising Committee), and if the student shows evidence of leadership and good professional attitudes and maintains a satisfactory moral character.

*Robert Wood Johnson Foundation Student-Aid Program* — This program is designed to aid women students and students from minority and rural backgrounds and is administered by the American Fund for Dental Health in cooperation with the School of Dentistry.

*Armed Forces Health Professions Scholarship Program* — In this program an eligible student applies to one of three branches of the Armed Forces of the student's choice. If selected, the student is commissioned a second lieutenant or ensign in the inactive reserve. While in the program, the student receives a monthly stipend. During an annual 45-day active duty tour an additional stipend will be received. The active duty tour will be performed at a military hospital or medical center, and will be arranged in order not to interrupt the student's academic work. If required by the school, arrangements may be made to permit serving the 45-day active duty on campus. In addition, the service will pay all tuition, mandatory fees, and related academic expenses of the student. The student incurs an obligation of one year of active commissioned service for each year or fraction of a year of program participation. All participants incur a minimum tour of two years. For further information, you may write one of the following: Department of the Army, DASG-PTP, Washington, DC 20314; Bureau of Medicine and Surgery, Navy Department (Code 3174), Washington, DC 20372; ATC/RSOS, Randolph Air Force Base, TX 78148.

## Organizations

*American Student Dental Association.* Predoctoral and advanced education dental students are eligible to become members of the American Student Dental Association. Membership provides for student membership in the American Dental Association.

*American Association of Dental Schools.* All dental and auxiliary students, including advanced education students, are eligible to become student mem-

bers of the American Association of Dental Schools during the period of enrollment in the School of Dentistry.

*The WVU School of Dentistry Alumni Association.* In a series of meetings held during May, 1961, the first senior class of the School of Dentistry established the WVU School of Dentistry Alumni Association. The Association promotes the educational program of the School of Dentistry. Full membership is extended to all graduates of the School, and associate memberships are available to others interested in the aims of the Association.

*Omicron Kappa Upsilon.* On February 6, 1961, the Alpha Beta Chapter of Omicron Kappa Upsilon, national honorary dental society, was chartered at the School of Dentistry. Student membership is limited to 12 per cent of each senior class. Candidates are selected from the academically superior 20 per cent.

*Dental Fraternities.* Chapters of three national dental fraternities were organized and established in 1962. First formal initiation ceremonies were conducted on February 9, 1962, by Beta Theta Chapter of Xi Psi Phi and Chi Chi Chapter of Delta Sigma Delta, and on February 10, 1962, by Sigma Chapter of Psi Omega. Membership in each fraternity is limited by an established class quota. Individual eligibility is based upon an accumulated 2.0 average.

## Courses of Instruction in Dentistry

Each course is designated by the name of the department teaching it, its number and title, the semester in which it is offered, and hours of credit. Generally, those courses given in the first year are numbered 300-324; second year, 325-349; third year, 350-374; and fourth year, 375-399. Elective opportunities are offered to students during the fourth year of study. See courses 394 and 397. Other University courses may be taken with the approval of the student's adviser and the Assistant Dean for Instruction.

### Fixed Prosthodontics

Professors Adams and Tucker; Associate Professor McCurdy; Assistant Professors Kwiatkowski and Ladwig; Instructors Atkins, K. Smith, and Valentine.

- 314. *Fixed Prosthodontics 1.* S. 1 hr. Preclinical lectures and laboratory exercises in which first-year students are introduced to the technics of preparing and restoring teeth with crown restorations.
- 336. *Fixed Prosthodontics 2.* Yr. 4 hr. Lectures and laboratory exercises on principles and technics of crown and bridge prosthodontics.
- 357. *Fixed Prosthodontics 3.* Yr. and S. 4 hr. Lectures and procedures employed in clinical practice. Types of dental bridges, their indications and contraindications.
- 389. *Fixed Prosthodontics 4.* I and II. 2-4 hr. Clinical practice of crown and bridge prosthodontics. Emphasis on problems related to diagnosis and construction of more complex dental bridges.
- 397. *Special Topics.* (Fourth Year). I and II. 1-3 hr. PR: Consent. Provides didactic, laboratory and/or clinical opportunities for students to pursue additional knowledge and/or skills in dental topics of special interest. As arranged.

## Dental Anatomy

Associate Professor Farace; Assistant Professor Kwiatkowski; Instructors K. Smith and Foor.

310. *Dental Anatomy and Occlusion*. I. 4 hr. Anatomy of individual teeth, both permanent and primary in regard to form and function and their static and dynamic occlusal relationships.

## Dental Auxiliary Utilization

Professor Brown; Associate Professors Gaver and Puderbaugh; Assistant Professor Weaver; Instructor Walker.

325. *Auxiliary Utilization 1*. II and S. 2 hr. Designed through didactic and clinical experience to prepare dental students in the concepts of four-handed dentistry.
371. *Auxiliary Utilization 2*. Yr. and S. 4 hr. PR: Dent. 325. Continuation of clinical experience in four-handed dentistry, with the introduction of effective practice management and the TEAM approach to dental health care delivery.
375. *Auxiliary Utilization 3*. I, II. 1-2 hr. PR: Dent. 371. Continuation of clinical practice using auxiliaries, particularly those trained in expanded duties.

## Dental Materials

Professors Hutchinson and Overberger; Associate Professor McCurdy; Assistant Professor Weaver; Instructor Quarles.

312. *Dental Materials*. I. 3 hr. Composition, physical, chemical, mechanical, and manipulative properties, and technical uses of dental restorative materials as related to dentistry.
397. *Special Topics*. (Fourth Year). I and II. 1-3 hr. PR: Consent. Provides didactic, laboratory and/or clinical opportunities for students to pursue additional knowledge and/or skills in dental topics of special interest. As arranged.

## Endodontics

Professors Alberico and Biddington; Associate Professors Griffin and Skidmore; Assistant Professor Shuman; Instructors Balaban and Pinson.

321. *Endodontics 1*. S. 2 hr. Preclinical lectures and laboratory exercises on basic technical and biological requisites in the treatment of diseases of the dental pulp and the periapical tissues.
342. *Endodontics 2*. Yr. and S. 1 hr. Minor clinical endodontic procedures which will stress the application of principles presented in Dent. 321.
362. *Endodontics 3*. Yr. and S. 2 hr. PR: Dent. 321, 342. Lectures on rationale, diagnosis, prevention and non-surgical and surgical treatment of diseases of the dental pulp and their sequelae; also correlating and applying the basic biological and basic dental sciences in the treatment of pulpal and periapical disease.
380. *Endodontics 4*. I and II. 1-2 hr. Continued clinical endodontics stressing the diagnosis and treatment of endodontic problems.

397. *Special Topics*. (Fourth Year). I and II. 1-3 hr. PR: Consent. Provides didactic, laboratory and/or clinical opportunities for students to pursue additional knowledge and/or skills in dental topics of special interest. As arranged.

## Medicine

Professors Flink, Sleeth, and Welch.

333. *Physical Diagnosis*. II. 1 hr. Lectures and demonstrations procedures involved in performing a physical examination and in understanding the hospital medical chart from standpoint of history, physical examination, laboratory, and x-ray examination data.
374. *Principles of Medicine*. I. 2 hr. General diseases about which the dental student should have intelligent working knowledge. Students assigned to specific hospitalized patients to review their findings with the class.

## Operative Dentistry

Professors Sausen and Hutchinson; Associate Professors Farace, Gaver, and Puderbaugh; Assistant Professors Chapman, Reed, and Weaver; Instructors Foor, Kelly, Layman, Naylor, Quarles and Walker.

304. *Operative Dentistry 1*. II. 4 hr. Preclinical course in principles of cavity preparation, manipulation of plastic restorative materials, and related instrumentation. Gold inlay technique introduced. Characteristics and treatment of caries emphasized.
322. *Operative Dentistry 2*. S. 2 hr. Preclinical course to include a variety of cavity forms and their restoration with compacted golds. Preparation is made for entering clinical activity. Certain fundamentals of pedodontics introduced.
329. *Operative Dentistry 3*. Yr. 3 hr. Initiation of clinical practice with comprehensive examinations and treatment planning of assigned patients. Lectures relate to standard clinical procedures and to laboratory instruction in direct and indirect cast gold restorations.
348. *Operative Dentistry 4*. S. 2 hr. Cavity medications, biological reactions to restorative materials and techniques, bur technology, and clinical variations of cavity form and treatment. Clinical practice is expanded, and includes a significant number of gold restorations.
358. *Operative Dentistry 5*. Yr. and S. 3 hr. More complex and advanced techniques for clinical practice and new developments throughout the scope of operative dentistry. Clinical practice expanded to provide experience in all classifications of restorative procedures.
383. *Operative Dentistry 6*. I and II. 2-4 hr. Clinical experience course in which additional cases are treated to improve upon efficiency and finesse. Sufficient variety and depth of experience is obtained to reach adequate competence for independent practice of operative dentistry.
397. *Special Topics*. (Fourth Year). I and II. 1-3 hr. PR: Consent. Provides didactic, laboratory and/or clinical opportunities for students to pursue additional knowledge and/or skills in dental topics of special interest. As arranged.

## Oral Diagnosis

Professor Graham; Associate Professor Thomas; Assistant Professors Bowers, T. J. Martin, and H. Smith.

303. *Oral Diagnostic Techniques*. II. 2 hr. Lectures and laboratory exercises introduce and stress fundamental principles of oral diagnosis including patient health history and clinical examination methods. Intraoral roentgenography. General approach to treatment planning for comprehensive oral health care.
323. *Clinic Orientation*. S. 1 hr. Series of specially arranged lectures, demonstrations, and clinical exercises to orient student to clinical procedures in the clinical disciplines.
337. *Oral Diagnosis 1*. Yr. and S. 2 hr. Didactic instruction with further application of diagnostic procedures presented in Dent. 303, extended to include special examination procedures and technics applicable to evaluating clinical problems.
364. *Oral Diagnosis 2*. Yr. and S. 1 hr. Clinical application of principles presented in Dent. 337.
387. *Oral Diagnosis 3*. I and II. 1-2 hr. Continued clinical experience providing opportunities for further independent observation and analysis of clinical problems.
397. *Special Topics*. (Fourth Year). I and II. 1-3 hr. PR: Consent. Provides didactic, laboratory and/or clinical opportunities for students to pursue additional knowledge and/or skills in dental topics of special interest. As arranged.

## Oral Pathology

Associate Professor Lalonde; Assistant Professor Bouquot.

338. *Oral Pathology*. (For dental and dental hygiene students.) II. 4 hr. PR: Consent; Path. 328. Application of knowledge gained in general pathology to study specific diseases affecting the oral cavity.
353. *Oral Oncology*. (For dental students.) I. 1 hr. PR: Consent; Dent. 338. Recognition of benign, malignant, and premalignant lesions with emphasis on biopsy, exfoliative cytology, and other clinical diagnostic procedures.
355. *Clinico-Pathologic Correlation Conference*. (For dental students.) II. 1 hr. PR: Consent; Dent. 338, 353. Interesting clinical cases are demonstrated grossly, radiographically, and histologically. Diagnosis is established and treatment discussed.
382. *Advanced Oral Histopathology*. (For dental students and graduate students, residents and interns.) II. 1 hr. PR: Consent, Dent. 338, 353. An elective seminar stressing the significant microscopic features and diagnosis of various oral lesions.
397. *Special Topics*. (Fourth Year). I and II. 1-3 hr. PR: Consent. Provides didactic, laboratory and/or clinical opportunities for students to pursue additional knowledge and/or skills in dental topics of special interest. As arranged.
401. *Special Studies in Oral Pathology*. (For dental and graduate students, residents and interns.) I, II, S. 1-3 hr. PR: Consent. Advanced study of local or systemic disease processes affecting oral structures through seminars, assignment of specific topics or research activities.

## Oral Roentgenology

Professor Graham; Associate Professor Thomas; Assistant Professors Bowles, T. J. Martin, and H. Smith.

327. *Oral Roentgenology*. I. 1 hr. Physical and biological phenomena associated with x-radiation. Intraoral and extraoral technics presented and instruction in interpretation of roentgenograms, with special emphasis relative to oral diagnosis.
367. *Clinical Oral Roentgenology 1*. Yr., S. 1 hr. Clinical application of principles presented in Dent. 303 and 327.

- 396. *Clinical Oral Roentgenology 2.* I and II. 1-2 hr. Additional clinical experience in oral roentgenology.
- 397. *Special Topics.* (Fourth Year). I and II. 1-3 hr. PR: Consent. Provides didactic, laboratory and/or clinical opportunities for students to pursue additional knowledge and/or skills in dental topics of special interest. As arranged.

## Oral Surgery

Professors Campbell and Welch; Associate Professor Graves; Assistant Professors King and Oliverio; Special Lecturers Davidson and Wallace.

- 300. *Anesthesiology.* II and S. 1 hr. Introduction to general anesthesia; lectures on local anesthesia, including types, modes of action, indications, and contraindications for use. Pre-medication, toxic effects, and technics of administration are discussed.
- 339. *Oral Surgery 1.* II and S. 2 hr. Didactic instruction and clinical experience in basic surgical principles as applied to the extraction of teeth, including classification and techniques for the surgical removal of impactions.
- 359. *Oral Surgery 2.* Yr. and S. 4 hr. Didactic instruction in diagnosis and surgical and adjunctive treatment of diseases, injuries, and defects of human jaws and associated structures. Practical training obtained by assignments in the oral surgery clinic and in University Hospital.
- 384. *Oral Surgery 3.* I and II. 2-4 hr. Continuation course in oral surgical procedures including additional experience in the hospital environment.
- 397. *Special Topics.* (Fourth Year). I and II. 1-3 hr. PR: Consent. Provides didactic, laboratory and/or clinical opportunities for students to pursue additional knowledge and/or skills in dental topics of special interest. As arranged.
- 400. *Advanced Oral Surgery.* I, II, S. 1-12 hr. PR: Consent. Advanced study of therapeutics, hospital protocol, and surgical aspects of oral surgery involving lectures, seminars, demonstrations and clinical applications.

## Orthodontics

Professor Merow; Associate Professor Gaston; Assistant Professors Dempsey, H. E. Martin, and Wilfong; Visiting Lecturers Caveney, Eckley, and Schindler.

- 345. *Principles of Orthodontics.* II. 1 hr. Facial growth and development, the development of dental occlusion, and etiology and classification of malocclusions.
- 346. *Orthodontic Technics.* S. 1 hr. Technical instruction in taking diagnostic records and constructing basic orthodontic appliances.
- 365. *Clinical Orthodontics 1.* Yr. and S. 2 hr. Case analysis, treatment planning, clinical practice, and seminars concerning interceptive, preventive, and adjunctive treatment of malocclusions.
- 385. *Clinical Orthodontics 2.* I and II. 1-2 hr. Continued clinical management of selected malocclusion problems.
- 397. *Special Topics.* (Fourth Year). I and II. 1-3 hr. PR: Consent. Provides didactic, laboratory and/or clinical opportunities for students to pursue additional knowledge and/or skills in dental topics of special interest. As arranged.

## Pedodontics

Associate Professors Nash and Schultz; Assistant Professors Gwynn, Johnsen, and Ruby.

- 335. *Pedodontics 1.* Yr. and S. 3 hr. Lecture and clinical practice in preventive diagnosis and treatment of dental disease of children, including dental caries, pulpal therapy, appliance considerations, and child management techniques.
- 361. *Pedodontics 2.* Yr. and S. 3 hr. Lectures and seminars on more advanced problems of children's dentistry including a number of congenital and systemic conditions related to oral health. Clinical practice in areas of child management, interceptive and preventive orthodontics, and applied restorative procedures.
- 386. *Pedodontics 3.* I and II. 1-2 hr. Additional opportunities for student to reach an adequate level of understanding and experience in pedodontics.
- 397. *Special Topics.* (Fourth Year). I and II. 1-3 hr. PR: Consent. Provides didactic, laboratory and/or clinical opportunities for students to pursue additional knowledge and/or skills in dental topics of special interest. As arranged.

## Periodontics

Associate Professor Morrison; Assistant Professor Pickle; Instructor Huetter.

- 311. *Periodontics 1.* S. 1 hr. Histopathology of periodontal disease with emphasis on etiology, examinations, diagnosis and treatment planning. Laboratory instruction on correct periodontal instrumentation.
- 340. *Periodontics 2.* Yr. and S. 3 hr. Didactic and clinical instruction on diagnosis and treatment of periodontal diseases, including occlusion and selective grinding techniques.
- 363. *Periodontics 3.* Yr. and S. 2 hr. Didactic and clinical instruction correlating periodontics with all other areas of dentistry with continued clinical diagnosis and treatment of periodontal diseases.
- 377. *Periodontics 4.* I and II. 1-2 hr. Continued and additional clinical experience in clinical diagnosis and treatment of periodontal disease.
- 397. *Special Topics.* (Fourth Year). I and II. 1-3 hr. PR: Consent. Provides didactic, laboratory and/or clinical opportunities for students to pursue additional knowledge and/or skills in dental topics of special interest. As arranged.

## Removable Prosthodontics

Professors Bianco and Somers; Associate Professor DeCounter; Assistant Professors Kluth and Van Riper; Instructors Christian, Glover, and Harper; Special Lecturer DiNapoli.

- 313. *Removable Prosthodontics 1.* I. 3 hr. Lectures and laboratory practice in biomechanical requirements of the edentulous patient.
- 316. *Removable Prosthodontics 2.* S. 1 hr. Lectures and laboratory practice in maxillomandibular relationships and occlusion.
- 334. *Removable Prosthodontics 3.* Yr. 3 hr. Didactic and laboratory practice for treatment of the partially edentulous patients, and introduction to clinical complete denture prosthodontics.

341. *Removable Prosthodontics 4.* S. 2 hr. Clinical demonstrations correlating the didactic and laboratory practices with the actual treatment of a removable prosthodontic patient.
350. *Removable Prosthodontics 5.* Yr. and S. 4 hr. Lectures and general clinical practice in complete and partial removable prostheses.
376. *Removable Prosthodontics 6.* I and II. 2-4 hr. Continued clinical practice in various and special removable prosthodontic procedures.
397. *Special Topics.* (Fourth Year). I and II. 1-3 hr. PR: Consent. Provides didactic, laboratory and/or clinical opportunities for students to pursue additional knowledge and/or skills in dental topics of special interest. As arranged.

## **Preventive Dentistry and Community Health**

Associate Professors Griffin, McCutcheon, and Thomas.

315. *Preventive Dentistry and Community Health 1.* Yr. 4 hr. A multipartite course encompassing the fundamentals of sociology, ethics, professional communication, and clinical psychology as they apply to the study and practice of dentistry. Introduction to the theory and practice of preventive dentistry.
320. *Preventive Dentistry and Community Health 2.* II. 1 hr. Fundamentals of statistical analysis and the scientific method necessary to the understanding of dental research.
330. *Preventive Dentistry and Community Health 3.* II. 1 hr. Lectures and field experience provide the student with a basic knowledge of the principles of dental public health practice. Emphasis on dental epidemiology and preventive dentistry at the community level.
332. *Preventive Dentistry and Community Health 4.* S. 1 hr. A bipartite course providing lectures in the advanced theory and practice of preventive dentistry. Intermediate considerations of ethics in dental practice.
352. *Preventive Dentistry and Community Health 5.* Yr. 3 hr. A bipartite course of lectures on fundamental legal rights, obligations, and responsibilities of the dentist; on effective practice management; and seminars, proseminars and field experience in oral communication, health education, and social psychology.
354. *Preventive Dentistry and Community Health 6.* S. 1 hr. A bipartite course of lectures covering the origin and development of dentistry, and immediate ethical practice considerations.
394. *Preventive Dentistry and Community Health 7.* I and II. 1-16 hr. PR: Consent: (Selective Extramural Experience in Dentistry). This aspect of the program provides dental students a variety of selective extramural experiences in dentistry in remote-site settings, including field experience in various aspects of community health.

## **ADVANCED EDUCATION PROGRAMS**

The School of Dentistry offers advanced education programs. The Department of Orthodontics offers a program of advanced study leading to the Master of Science degree. Programs leading to the Master of Science and Doctor of Philosophy degrees are available in the basic sciences of Anatomy, Microbiology, Biochemistry, Biophysics-Physiology, and Pharmacology. (See Basic Sciences.) The Department of Oral Surgery offers one oral surgery internship and two oral surgery residencies. Three general practice residencies also are offered by the School of Dentistry. Continuing education courses are offered



throughout the year. Detailed information concerning admission requirements, courses of study, etc., in the intern and residency programs may be obtained from the Office of the Associate Dean for Advanced Education Programs.

## ORTHODONTIC PROGRAM

### Master of Science

The School of Dentistry and its Department of Orthodontics offer a program of advanced study and clinical training leading to the Master of Science degree. The program requires a minimum of 23 months (two academic years and two summer sessions) of full-time residency in the School of Dentistry, and is designed to qualify dentists for careers in orthodontic clinical practice, teaching, and research.

Inquiries concerning this program should be directed to the Office of the Associate Dean for Advanced Education Programs. Applicants will be recommended to the Graduate School for admission. Those applicants approved for admission to the program will be notified soon after January 15.

### Requirements for Admission to Orthodontic Program

1. Graduation from an accredited dental school.
2. Evidence of scholastic and clinical achievement that would indicate the applicant's ability to progress in a program of this nature.
3. Each applicant must file with the department all information requested in the department application form.

### Requirements for Master of Science Degree for Students Enrolled in Orthodontic Program of School of Dentistry

1. Fulfillment of requirements of the Graduate School.
2. Twenty-three months (two academic years and two summer sessions) of consecutive residency at the School of Dentistry.
3. An approved master's thesis based on original research completed during the period of residency in an area related to orthodontics.
4. Must satisfactorily pass a final oral examination.
5. Must complete a minimum of 56 credit hours. These include 35 hours of orthodontic courses, a minimum of 9 hours of selected basic science subjects, and a minimum of 6 hours of elective allied subjects, and a thesis (6 hours).
6. Must have demonstrated satisfactory clinical competence in the student's field.
7. Must have maintained a grade level commensurate with graduate education.

### Orthodontics

416. *Biomechanics*. I, II, S. 2 hr. PR: Consent. Design and function of the teeth and their surrounding structures, and response of these tissues to orthodontic procedures.
417. *Orthodontic Technique*. I, II, S. 2 hr. PR: Consent. Laboratory course in techniques related to fabrication and manipulation of orthodontic appliances.
418. *Orthodontic Materials*. I, II, S. 1 hr. PR: Consent. Physical properties of materials used in orthodontic appliances.

- 419. *Orthodontic Diagnosis*. I, II, S. 1-3 hr. PR: Consent. Seminar-type class on technique of patient examination, acquiring diagnostic records, and analyzing and correlating this information to the treatment of clinical problems.
- 420. *Cephalometrics*. I, II, S. 1-3 hr. PR: Consent. Use of radiographic cephalometry in studying growth of the human face, analysis of dentofacial malformations, and evaluation of orthodontic treatment.
- 421. *Orthodontic Mechanics*. I, II, S. 1-4 hr. PR: Dent. 416, 417. Seminar and laboratory course on basic orthodontic mechanical properties.
- 422. *Advanced Orthodontic Mechanics*. I, II, S. 1 hr. PR: Dent. 421. Continuation of Dent. 421 involving more difficult type cases and introducing more sophisticated appliance therapy.
- 423. *Growth and Development*. I, II, S. 1-5 hr. PR: Consent. Seminar-type course on normal and abnormal growth of the human head and its application to orthodontics.
- 425. *Orthodontic Seminar*. I, II, S. 1-8 hr. PR: Consent. Discussions involving all branches of dental science, with special emphasis on the orthodontic interest. Assigned topics and articles in the literature discussed.
- 426. *Orthodontic Clinic*. I, II, S. 1-12 hr. PR: Dent. 416, 417. Clinical treatment of selected patients.
- 497. *Research*. I, II, S. 1-15 hr.

# DENTAL HYGIENE PROGRAM

The Dental Hygiene Program is a Division of the School of Dentistry. (Complete information concerning the School of Dentistry professional program — D.D.S. — may be obtained in the *WVU Graduate Catalog*.) The four-year Dental Hygiene Program curriculum combines the advantages of both a liberal arts and a professional education. This curriculum format has departed from the conventional, but there is a definite conviction that the inclusion of many disciplines provides greater strength to the program. The educational objectives of the Dental Hygiene Program are:

To prepare individuals to perform to the level of competency specified by the faculty, the state boards of dental examiners, and employers those oral health services legally approved for a dental hygienist in any state, district, or territory of the United States. Presently, these services include: observation, recording, prevention, treatment, education, and communication.

To prepare individuals capable of performing the clinical skills delegated to any dental auxiliary (excluding the dental laboratory technician) and to prepare these individuals to teach clinical skills and to present didactic information in dental auxiliary education programs.

To prepare individuals capable of performing coordinative and administrative functions in public health and community related areas.

To prepare individuals for the dental hygiene profession who have a keen sense of social awareness and professional responsibility.

To motivate students to pursue independent thought and continually develop themselves as professional people.

To prepare individuals who have the capability to understand and adapt to new developments and changes in the scientific, sociologic, and practical factors pertaining to health.

To provide the educational foundation for higher education.

Upon completion of all requirements and with the recommendation of the School of Dentistry, the candidate is awarded a bachelor of science degree in Dental Hygiene.

The Dental Hygiene curriculum is structured in accordance with the standards specified for a Dental Hygiene Program by the Council on Dental Education of the American Dental Association. The program has been fully accredited by this organization since 1965.

## Admission

Students enter dental hygiene as freshmen, and the general admission policies of West Virginia University are followed. The applicant must be a graduate of an accredited high school or preparatory school and have completed one unit of algebra, one unit of geometry, four units of English, biology, and chemistry. Good grades are expected and applicants should rank in the upper one-third of their graduating class. Particular attention is given to academic achievement in science courses.

The American College Testing Program (ACT) examination is required of high school applicants. A high school counselor can supply information concerning this examination. The Dental Hygiene Aptitude Test is required of every applicant. A brochure with detailed information and instructions about this test is mailed with application materials or may be obtained by writing the American Dental Hygienist Association, 211 East Chicago Ave., Chicago, IL 60611.

The competition for entrance into dental hygiene is extremely keen. Non-residents should recognize that preference is given to West Virginia residents. Only those nonresidents with the highest qualifications will be considered.

The personal qualifications, scholastic record, test scores, and recommendation of each applicant are reviewed by the Dental Hygiene Admissions Committee. After reviewing these credentials, the committee may request an interview with the applicant. If this is the case, the applicant is notified by letter of the date, time, and place of the interview.

For application materials the applicant should write to the Coordinator of Dental Hygiene, West Virginia University, or the Office of Admissions and Records, WVU Medical Center, Morgantown, WV 26506. Applicants should apply and complete aptitude tests as early as possible in the year preceding the year admission is desired. Applications are available in September and are not accepted after March 1.

## Promotion

At the end of each semester, the status of each dental hygiene student is reviewed by the Dental Hygiene Committee on Academic Standards. This committee then makes recommendations to the Dean. Final disposition in each case is the prerogative of the Dean and Coordinator of Dental Hygiene.

Unconditional promotion normally depends upon fulfillment of all course requirements and the attainment of both a minimum cumulative grade-point average and a minimum science-dental hygiene grade-point average. These minimum grade-point averages are: a 1.50 for promotion to the second year; a 1.75 for promotion to the third year; a 2.0 for promotion to the fourth year; and a 2.0 for graduation. The courses (or equivalents) utilized to calculate the science-dental hygiene grade-point average are:

Chemistry 11	Dental Hygiene 1	Dental Hygiene 152
Chemistry 12	Dental Hygiene 2	Dental Hygiene 154
Anatomy 101	Dental Hygiene 66	Dental Hygiene 155
Pathology 128	Dental Hygiene 85	Dental Hygiene 168
Pathology 338	Dental Hygiene 90	Dental Hygiene 169
Microbiology 26	Dental Hygiene 105	Dental Hygiene 172
Physiology 141	Dental Hygiene 120	Dental Hygiene 174
Pharmacology 160	Dental Hygiene 125	Dental Hygiene 202
Anesthesiology 300	Dental Hygiene 150	Dental Hygiene 205
		Dental Hygiene 206

Students who do not qualify to be promoted unconditionally may be placed on probation or may be suspended from further studies in the Division of Dental Hygiene. Probationary status implies that the student will be allowed to make up deficiencies or be given an opportunity to repeat a year.

If a student is promoted on probation, the student must reach the required minimum standards specified above. Students on probation who do not obtain these standards will be reevaluated by the Committee.

The Division of Dental Hygiene reserves the right to suspend or require remedial work of any student who does not perform at a level satisfactory for patient care.

## Professional Organizations

*The American Dental Hygienists' Association* is the official organization representing the dental hygiene profession. Student dental hygienists have the opportunity of junior membership in the association.

*Sigma Phi Alpha* is the national dental hygiene honorary society. Student membership is limited to 10 percent of each graduating class. Candidates are selected on the basis of scholarship, character, and potential as a dental hygienist.

*American Association of Dental Schools.* This association of dental educational institutions and faculties has as its primary purpose to promote and improve dental education. Dental hygiene students may join as student members.

*West Virginia University School of Dentistry Alumni Association.* Graduates of the Division of Dental Hygiene may join and participate in all activity of the Alumni Association.

## Student Scholarships and Loans

*The American Dental Hygienists' Association* awards scholarships and loans to qualified dental hygiene students. To apply for this financial assistance a student should write the American Dental Hygienists' Association, 211 East Chicago Ave., Chicago, IL 60611, and request information and application forms.

*The West Virginia State Dental Auxiliary Award.* In 1963, a scholarship award was founded for a second-semester junior dental hygiene student. This award was originally sponsored by Mrs. Marian Nicholson Kaiser and is perpetuated by the Woman's Auxiliary to the West Virginia Dental Association. The recipient is selected for academic accomplishments and professional potential in dental hygiene.

*Jane Gunnet Memorial Scholarship.* In 1970, friends of Miss Jane Gunnet, a graduate of the Division of Dental Hygiene, established a scholarship fund in her memory. The scholarship is awarded annually. The recipient is chosen by the dental hygiene faculty on the basis of scholastic achievement.

*Phyllis Preston Memorial Fund.* This fund was established by the Woman's Auxiliary to the Huntington Dental Society in memory of a former member of their auxiliary. Monies are awarded in the form of scholarships to dental hygiene students.

*Dental Hygiene Revolving Loan Fund.* The fund was established by the Woman's Auxiliary to the Wheeling District Dental Society. The loan is administered by WVU Financial Aids Office. Any dental hygiene student from West Virginia, with a 2.0 average, may apply. Repayment is required within a year following graduation or termination of enrollment in the Division of Dental Hygiene.

*General Funds.* General University scholarships and loans are available to undergraduate students through the Financial Aids Office. Students interested in financial assistance should contact the Financial Aids Office, Mountainlair, West Virginia University, Morgantown, WV 26506.

## DENTAL HYGIENE CURRICULUM PLAN

FIRST YEAR				SECOND YEAR			
<i>First Sem.</i>	<i>Hr.</i>	<i>Second Sem.</i>	<i>Hr.</i>	<i>First Sem.</i>	<i>Hr.</i>	<i>Second Sem.</i>	<i>Hr.</i>
English 1	3	English 2	3	Anat. 101	4	Physiol. 141	4
P.E. 1	1	P.E. 2	1	Path. 128	2	Dent. 338	3
Core A		Chem. 12	4	D. Hyg. 105	2	Pharmacol. 160	3
(Sp. Com. 11 & 14)	3	D. Hyg. 2	3	Nutr. 71	3	D. Hyg. 120	1
Core B (Psych. 1)	3	D. Hyg. 85	3	Ed. Psych. 105	3	D. Hyg. 125	4
Chem. 11	4	D. Hyg. 90	3	Microbiology 26	3	Ed Psych. 260	4
D. Hyg. 1	2						
D. Hyg. 66	1						
	<hr/> 17		<hr/> 18		<hr/> 17		<hr/> 19
THIRD YEAR				FOURTH YEAR			
<i>First Sem.</i>	<i>Hr.</i>	<i>Second Sem.</i>	<i>Hr.</i>	<i>First Sem.</i>	<i>Hr.</i>	<i>Second Sem.</i>	<i>Hr.</i>
D. Hyg. 168	1	D. Hyg. 169	1	D. Hyg. 202	2	D. Hyg. 206	2-4
Core A (Elective)	3	D. Hyg. 174	2	D. Hyg. 205	6	Elective	
Core B		Core B		Core B			
(Psych. 141 or 164)	3	(S.A. 1, 5, or 7)	3	(S.A. 122, 140, or 231)	3		
D. Hyg. 152	2	Core A		Elective			
Anest. 300	1	(Electives)	6				
D. Hyg. 172	2	D. Hyg. 150	2				
D. Hyg. 155*		D. Hyg. 155*					
D. Hyg. 154*		D. Hyg. 154*					
				Maximum	7	Maximum	15
				Minimum	4	Minimum	12
					<hr/> 15-18		<hr/> 14-18

\*Year courses — D. Hyg. 155 = 6 credit hours; D. Hyg. 154 = 4 credit hours.

## Courses of Instruction in Dental Hygiene

Nancy V. Ramsey, *Coordinator*; Assistant Professors Anne W. Shoaf and Pamela Tskenlis; Instructors Carolyn Miller, Mary Lynn Bogard, and Catherine Graves; School of Dentistry faculty.

Courses included in the dental hygiene curriculum but not listed here will be found either under other department listings in this *Catalog* or under the Basic Sciences or Dentistry sections of the *WVU Graduate Catalog*.

### D. Hyg.

1. *Orientation to Dental Hygiene*. I. 2 hr. PR: Enrollment in Dental Hygiene. Historical development of dental hygiene with emphasis on the philosophy, responsibilities, and current role of the dental hygienist as a member of the dental health team.
2. *Introduction to the Dental Specialties*. II. 3 hr. PR: D. Hyg. 1 or consent. Survey of functions and responsibilities of each of the dental specialties. Emphasis on the role of the dental assistant and dental hygienist in each type of practice.
66. *Technical Expression and Dental Literature*. I. 1 hr. Preparation and uses of professional communication.
85. *Oral Anatomy*. II. 3 hr. PR: Enrollment in Dental Hygiene. Human teeth and the anatomy of the head and neck with emphasis on structures in or related to the oral cavity.

90. *Oral Histology*. II. 3 hr. PR: Enrollment in Dental Hygiene. Histological structures of the teeth and tissues of the oral cavity and the morphological development of these structures.
105. *The Theory and Practice of Prevention*. I. 2 hr. Philosophy and techniques of preventive dentistry.
120. *Dental Nursing Technics*. II. 1 hr. PR: Enrollment in Dental Hygiene. Emergency first aid and principles of nursing applicable to the dental office.
125. *Dental Hygiene Technics*. II. 4 hr. PR: Enrollment in Dental Hygiene. Fundamental principles and technics of dental hygiene are presented through lectures, laboratory, and clinical participation.
150. *Dental Health Education*. II. 2 hr. Lectures, demonstrations, and field experiences on the methods, materials, and resources used in teaching of dental health to various population groups.
152. *Dental Radiology*. I. 2 hr. PR: Enrollment in Dental Hygiene. Basic principles and procedures in oral radiology technics and interpretation.
154. *Clinical Dental Hygiene*. I, II. 4 hr. PR: Enrollment in Dental Hygiene. Lectures and clinical application of dental hygiene principles and technics.
155. *Expanded Functions*. I, II. 6 hr. PR: Enrollment in Dental Hygiene. Lecture, laboratory, and clinical course covering the materials and technics of restorative dentistry and expanded duties for the dental hygienist.
168. *Periodontics*. I. 1 hr. Tissues of the periodontium, histopathology of periodontal disease with emphasis on etiology, examinations, diagnosis, treatment, and prevention within the scope of dental hygiene.
169. *Periodontics*. II. 1 hr. PR: D. Hyg. 168. A sequential course to D. Hyg. 168. Includes recognition and treatment of periodontal disease with emphasis on occlusion, surgical procedures, and post-operative care of patients.
172. *Public Health*. I. 2 hr. Theory and practice of preventive dentistry and community health.
174. *Dental Hygiene Teaching Methods*. II. 2 hr. Concepts and principles of administration, curriculum, and clinical teaching unique to dental auxiliary education. Emphasis on overall role of the dental hygiene educator.
202. *Dental Hygiene Practice*. I. 2 hr. PR: Senior enrollment in Dental Hygiene. Scope of practice for the dental hygienist including ethical and legal considerations. Public and professional relations as well as practice management are discussed.
205. *Advanced Clinical Dental Hygiene*. I. 6 hr. PR: Senior enrollment in Dental Hygiene. Role of the dental hygienist in an orthodontic practice, pre- and post-operative care of surgical patients, and introduction to research. Students gain clinical experience in both traditional and expanded duties of the dental hygienist.
206. *Advanced Clinical Dental Hygiene*. II. 2-4 hr. PR: Senior enrollment in Dental Hygiene. Continuation of clinical practice experience in dental hygiene procedures.
220. *Special Topics in Dental Hygiene*. I, II. 1-22 hr. PR: Senior enrollment in Dental Hygiene. Special topics relevant to dental hygiene. A variety of sections offer elective opportunities to dental hygiene majors.

## MEDICAL CENTER BASIC SCIENCES

The Departments of Anatomy, Biochemistry, Microbiology, Pharmacology, and Physiology and Biophysics offer individual graduate programs leading to the M.S. and Ph.D. degrees and provide courses for students of medicine, dentistry, pharmacy, nursing, and other allied health professions. Applicants to graduate programs in these departments should have a strong background in the sciences and have a grade-point average of 3.0 or above. Graduate Record Examination scores also are used to evaluate applicants for the M.S. and/or Ph.D. programs. A student whose baccalaureate preparation is deemed insufficient for the contemplated program will be required to eliminate deficiencies in the first year of studies. The general guidelines for admission and degree programs are those outlined by the Graduate School, but each basic science department may have additional academic requirements. These academic requirements and related materials may be obtained by contacting the particular department.

### Anatomy

Professors Enlow (*Chairman*), Jones, (Emeritus), Kimmel (Emeritus), McCafferty, Reyer, and Williams (Emeritus); Associate Professors Beresford, Butcher, Carmichael, Culberson, Friedman, Haines, Hilloowala, and Pinkstaff; Assistant Professors Frederickson, Overman, and Pope; Instructor Walker; Lecturer Clayton.

*Research Areas* — Gross Anatomy: Anatomical variations and anomalies, and electromyographic studies of specific muscle groups. Microscopic Anatomy: Studies of cells, tissues and organs, under normal and experimental conditions with histochemical, electron microscopic, autoradiographic, regenerative, and fluorescent techniques. Developmental Anatomy: Experimental and descriptive embryology, cellular differentiation, and dedifferentiation, organizers and the effects of different environments on development. Neuroanatomy: Experimental, comparative and embryological studies of specific nerve cell groups and nerve pathways in the spinal cord, brain stem, cerebellum, and cerebrum.

### Anat.

101. *Principles of Human Anatomy*. I. 3-4 hr. PR: Consent. Lectures and demonstrations on the gross and microscopic anatomy of the human body including development. Designed for students in the paramedical sciences.
102. *Gross Anatomy*. (For physical therapy students.) II. 3 hr. PR: Anat. 101 or consent. Functional gross anatomy of the back, extremities, and head.
103. *Microanatomy*. (For physical therapy students.) I. 2 hr. PR: Consent. Introductory cell and tissue structure for students in the Division of Physical Therapy.
109. *Oral Histology*. (For dental hygiene students and pre-dental students.) II. 3 hr. Histological structure and embryological development of the teeth, tissues, and organs of the oral cavity.



152. *Introduction to Physical Anthropology*. II. 3 hr. PR: Consent. Man's physical heritage (human evolution) in principle and through paleontology, man's current physical nature (race and ecology), and biologic basis of man's culture.
301. *Gross Anatomy of the Trunk*. (For medical and graduate students.) I. 5 hr. PR: Consent. Gross anatomical study of the back, thorax, abdomen, pelvis, and perineum.
302. *Gross Anatomy of the Head and Neck*. (For medical and graduate students.) II. 3 hr. PR: Consent. Gross anatomical study of the head and neck.
304. *Gross Anatomy of the Extremities*. (For medical and graduate students.) II. 2 hr. PR: Consent. Gross anatomical study of the upper and lower extremities.
305. *Microanatomy*. (For medical and graduate students.) I. 6 hr. PR: General biology or equiv. and consent. Cells, tissues, and organs.
306. *Gross Anatomy of the Trunk and Extremities*. (For dental and graduate students.) I. 4 hr. PR: General biology and consent. Gross anatomical study of the back, upper extremity, thorax, abdomen, and pelvis.
307. *Gross Anatomy of the Head and Neck and Neuroanatomy*. (For dental and graduate students.) II. 5 hr. PR: Anat. 306 or equiv. and consent. Gross anatomical study of the head and neck and a brief gross and microscopic anatomical study of the central nervous system.
308. *Neuroanatomy*. (For graduate students, students in physical therapy, and other health sciences.) II. 2 hr. PR: Consent. Gross and microscopic structure of the central nervous system. (See also Neurobiology, Conjoined Course 375.)
309. *Microanatomy and Organology*. (For dental and graduate students.) I. 4 hr. PR: General biology or equiv. and consent. Cells, tissues, and organs.
312. *Special Topics in Anatomy*. II. 2-4 hr. PR: Anat. 301 or 306; and 305 or 309; consent. Different topics of current interest in anatomy, not included in the regular graduate courses.
314. *Applied Anatomy*. II. 2-6 hr. per sem. PR: Consent. Detailed study of anatomy adapted to the needs of the individual student.
318. *Oral Histology and Embryology*. (For dental and graduate students.) II. 2 hr. PR: Anat. 305 or 309, and consent. Structure, function, and development of oral tissues and organs.
401. *Advanced Gross Anatomy*. I, II. 2-6 hr. per sem. PR: Anat. 301, 302, 304, and consent. Morphological and functional analysis of a selected region. With dissection.
402. *Advanced Developmental Anatomy*. II. 2-4 hr. per sem. PR: Anat. 301, 302, 304, and/or consent. Detailed developmental anatomy of the fetal period and infancy. With dissections and analysis of variations and malformations.
403. *Seminar*. I, II. 1-6 hr. 1 hr. per sem. Course may be repeated. PR: Consent. Special topics of current or historical interest.
405. *Experimental Embryology*. II. 3 hr. PR: Embryology and cellular physiology or biochemistry and consent. Development, differentiation, and regeneration.
406. *Advanced Neuroanatomy*. I. 2-4 hr. per sem. PR: Conjoined Course 375 or consent. Detailed study of selected areas of the nervous system. May be repeated.
408. *Histochemistry*. II. 3 hr. PR: Anat. 305 or 309, biochemistry, and consent. Histochemical theory and techniques.
451. *Advanced Microanatomy*. I, II, or S. 2-4 hr. PR: Anat. 305 or 309 or Biol. 263 and consent. An extension of the major topics included in Anat. 305 or 309. Special emphasis on recent contributions.
491. *Advanced Anatomy*. I, II. 2-8 hr.

497. *Research*. I, II, S. 1-15 hr. PR: Consent. May be repeated as needed with consent of the Graduate Committee.

## Biochemistry

Professors Krause (*Chairman*), Canady, Koppelman, Lotspeich, Rafter, Resnick, and Wirtz; Associate Professors Ellingson, Katz, and Tryfiates; Assistant Professors Blair, Harris, Jagannathan, and Ponton.

*Research Areas* — Nutrition: Vitamin A and carotene metabolism and metabolic role, manganese deficiency, B-6 nutrition in tumors. Organic synthesis and biological testing of amino acids analogues. Regulation of protein synthesis. Protein structure and biological activity. Immunochemistry; complement factors; antigen-antibody reactions. Chemistry of host-parasite relationship. Regulation of carbohydrate and lipid metabolism. Enzyme kinetics. Influence of diet on tissue protein and amino acid metabolism. Structure, function, and biosynthesis of transfer RNA. Nucleic acid and protein biosynthesis in isolated hepatocytes.

## Biochem.

139. *Introduction to Biochemistry*. I. 4-5 hr. (Pharmacy and Medical Technology students, others by consent.) PR: Inorganic chemistry. A. Lecture and conference, 4 hr. B. Laboratory, 1 hr.
231. *General Biochemistry*. I. 4-7 hr. (Medical students, others by consent.) PR: Inorganic chemistry, Organic chemistry. A. Lecture, 4 hr. (includes conference for medical students). B. Laboratory and demonstration, 3 hr.
239. *Clinical Chemical Techniques*. (Primarily for medical technology students.) II. 4 hr. PR: Biochem. 139, 231 or equiv. Open to other qualified students by consent.
305. *General Biochemistry*. II. 4 hr. PR: Inorganic chemistry, Organic Chemistry, and consent. Dental and graduate students. A. Lecture and conference. B. Laboratory and demonstration.
399. *Special Topics*. I, II, S. 1-12 hr. PR: Consent.
491. *Advanced Study*. I, II. 1-6 hr. PR: Biochem. 139, 231, or equiv. and consent.  
*Amino Acids, Peptides, and Proteins*. I. 2 hr.  
*Enzymology*. I. 2 hr.  
*Immunochemistry*. I. 2 hr. Biosynthesis, chemistry, and biological properties of proteins important in immunology.  
*Nucleic Acids and Protein Synthesis*. II. 2 hr.  
*Lipids*. II. 2 hr. PR: Agr. Biochem. 291 or Med. Biochem. 231, consent. Chemical and physical properties of various classes of lipids and their biochemical and physiological pathways within the cell and cellular particulates.  
*Enzyme Kinetics*. II. 3 hr. Physical mechanisms of enzyme action.
496. *Graduate Seminar*. I, II, S. 1 hr. PR: Biochem. 231 or equiv., consent. Presentation and discussion of special topics.
497. *Research*. I, II, S. 1-15 hr.

## Conjoined Basic Sciences Courses

In the curricula of the School of Medicine, certain courses are conducted on nondepartmental or interdepartmental lines. These have been designed as Conjoined Courses.

- 314. *Medical Human Growth and Development.* (For medical and graduate students.) II. 1 hr. PR: Consent. Basic considerations of embryology, organogenesis, teratology, and other factors influencing intrauterine growth and development and the adaptation of the fetus to extrauterine life.
- 320. *Electron Microscopy.* II. 2-4 hr. PR: Consent. Graduate students, upperclassmen in the sciences, medical students. Interdisciplinary. Introduction to cell fine structure and function. Preparation of biological specimens for electron microscopy.
- 322. *Biostatistics and Evaluation of Medical Literature.* (For medical and graduate students.) I. 2 hr. PR: Consent. Statistical analysis of biologic phenomenon as related to medicine.
- 350. *Radiation Safety and Isotope Usage.* II. 1-2 hr. PR: Physics 1 and 2, Chem. 15 and 16 or consent. Chemical, physical, and biological aspects of radiation; safety; handling and storage of radioactive materials; ERDA (formerly AEC) and WVU regulations and licensing; detection and instrumentation, research, and clinical use of radioisotopes.
- 370. *Medical Genetics.* (For medical and graduate students.) II. 1 hr. PR: Consent. Genetics and heritable diseases in man.
- 375. *Neurobiology.* (For medical and graduate students.) II. 6 hr. PR: Anat. 301 and Physiol. 345, or consent. Anatomy and physiology of the nervous system correlated with clinical neurology.
- 399. *Selective Experiences in Medicine.* Fourth year. I, II, S. CR. PR: Satisfactory completion of first three years of medical curriculum. (Graded as S or U.) The selective program for fourth-year medical students offers a wide range of opportunities, in the basic sciences, medical specialties and sub-specialties, and in family medicine. The year is composed of eleven 4-week blocks. Six must be spent at WVU Medical Center in Morgantown and approved programs at the Charleston Division, WVU Medical Center; Wheeling Division, School of Medicine; and Veterans Administration Hospital, Clarksburg. The remainder may be spent at community hospitals in West Virginia, or at university or university-affiliated hospitals out-of-state. Each student plans his individual program, with faculty advice. Flexibility is permitted. With consent of the instructors concerned, the student may, during the year, alter his selective choices. The student must give five weeks notice before changing an intramural or extramural selection. (See intramural and extramural folders, published annually, describing the selective opportunities.)

## Microbiology

Professors Snyder (*Chairman*), Burrell, Deal, Hall, Slack, and Voelz; Associate Professors Gerencser, Kirk, Mengoli, Pore, and Veltri; Assistant Professors Charon, Major, and Yelton.

*Research Areas* — Pathogenic Bacteriology: Mode of action of microbial products in pathogenicity; Identification and classification of anaerobic microorganisms including filamentous bacteria; oral microbiology; ecology of the oral cavity; clinical microbiology. Mycology: Pathobiology of medical mycoses; environmental health implications of fungal and algal toxicoses. Physiology: Nutrition and metabolism of a variety of pathogenic microorganisms. Ge-

netics: Basic studies on the mechanisms of genetics including transformation of genetic information. Virology: Basic studies on viral-tumor relationships; transduction of mammalian genome by viruses; virus-induced antigens in transformed cells; pathogenesis of lymphocytic choriomeningitis virus; immune response during latent infections; herpesvirus-host cell relationships; clinical virology. Parasitology: Host-parasite relationships between helminth parasites and insect and vertebrate hosts. Electron Microscopy: Cytological studies of the fine structures of microorganisms and the influence of environment on these structures. Immunology: Studies on the mechanisms of antigen-antibody reactions and the development of hypersensitivity.

## Microbiol.

26. *Microbiology*. II. 3-4 yr. (For students in paramedical sciences.) Pathogenic microorganisms.
220. *Microbiology*. II. 4 hr. (For pharmacy students.) PR or Conc.: Biochemistry. Pathogenic microorganisms, including immunology and antimicrobial agents.
223. *Microbiology*. II. 5 hr. (For medical technology students; graduate students with consent.) PR or Conc.: Organic chemistry. Basic microbiology. Emphasis on immunology, pathogenic microorganisms, and clinical laboratory techniques.
224. *Parasitology*. II. 4 hr. (For medical technology students.) Study of animal parasites and disease vectors with emphasis on disease manifestations, parasite biology, and laboratory diagnosis.
301. *Microbiology*. I. 5-7 hr. (For medical students.) PR: Organic chemistry, Biochemistry. Detailed study of pathogenic microorganisms. Emphasis on use of microbiology in solving clinical problems.
302. *Microbiology*. I. 5 hr. (For dental students.) PR: Organic chemistry. Detailed study of pathogenic microorganisms. Emphasis on oral flora.
316. *Basic Microbiology*. I. 4 hr. (For graduate students.) PR: Organic chemistry; Biology recommended; consent. Detailed review of major groups of microorganisms, including morphology and physiology.
317. *Special Problems in Microbiology*. I, II, S. 1-7 hr. per sem. with a total of 24 hr. available.  
*Basic Microbiology I*. 2-7 hr. PR or Conc.: Biochemistry. Basic principles of microorganisms. General course in microbiology, including structure, physiology, metabolism, nutrition growth, genetics, and taxonomy.  
*Basic Microbiology II*. 1-5 hr. PR: Basic Microbiol. I or equiv. Introduction to principles of infection and resistance. Lectures and laboratories devoted to examination of fundamentals of innate and acquired immunity, and pathogenic aspects of bacteriology, mycology, parasitology, and virology.
318. *Diagnostic or Determinative Microbiology*. I, II, S. 1-6 hr. per sem. with a total of 24 hr. available. PR: Microbiol. 316 or equiv; consent. Limited enrollment. Laboratory identification of pathogenic microorganisms. Includes practical experience in a clinical microbiology laboratory. (Graded as S or U.)
319. *Comparative Cytology*. II. 4 hr. PR: Conjoined Basic Sci. 320; consent. Limited enrollment. Basic features in structure and function of animal, plant, and microbial cells and their organelles. Projects in electron microscopy.
321. *Bacterial Physiology*. I. 3-4 hr. (Lect. 3 hr.; with lab. 4 hr.) PR: Microbiol. 316 or equiv.; Organic chemistry or Conc.: Biochemistry. Physiological studies on bacteria, including nutrition, metabolic pathways, growth, and death.

322. *Microbial Genetics*. II. 4 hr. PR: Microbiol. 316 or equiv.; consent. Microbial mutation and adaptation, bacterial gene transfer mechanisms, and cytoplasmic inheritance.
323. *Immunology*. II. 4 hr. PR: Microbiol. 316 or equiv. Antigens, antibodies, and their reactions both *in vitro* and *in vivo* with emphasis on theoretical and experimental problems.
324. *Virology*. II. 4 hr. PR: Microbiol. 316 or equiv.; Biochemistry. The basic biology of human, animal, and bacterial viruses.
325. *Medical Mycology*. I. 4 hr. PR: Basic Microbiol. II or equiv. Advanced study of the fungi of medical importance, including the pathobiology of mycoses and toxicoes.
326. *Seminar*. I, II, S. 1 hr. PR: Microbiol. 316 or equiv. Includes history of microbiology. (Graded as S or U.)
327. *Parasitology*. II. 4 hr. (For graduate students.) PR: Consent. Study of animal parasites and disease vectors with emphasis on disease manifestations, parasite biology, laboratory diagnosis, and current concepts in parasitological research.
490. *Teaching Practicum*. I and II. 1-3 hr. PR: Consent. Supervised practices in college teaching of microbiology. (Graded as S or U.)
491. *Advanced Study*. I, II. PR: Consent.

*Pathogenic Virology I*. 3 hr. PR: Basic Microbiol. I and II or equiv. Pathogenesis of medically important viruses and mechanisms for their control.

*Pathogenic Bacteriology I*. 2-3 hr. PR: Basic Microbiol. II. Pathogenic bacteriology, with an emphasis on the mechanisms of pathogenesis. Topics include microbial adherence, toxin production and mechanisms, and normal flora and disease.

*Clinical Laboratory Bacteriology*. S. 1 hr.; I, 2 hr. Lectures on the identification of pathogenic microorganisms with an emphasis on bacteria. The laboratory includes a rotation through the hospital clinical microbiology laboratory. Limited enrollment. (Graded as S or U.)

*Microbial Genetics*. I. 4 hr. PR: Basic Microbiol. I or equiv. Molecular aspects of mutation, gene transfer mechanisms, genetic mapping, and genetic control using bacteria and bacteriophage systems as models.

*Bacterial Physiology*. II. 2 hr. PR: Basic Microbiol. I; biochemistry. The physiology and metabolism of bacteria of medical, industrial and ecological importance.

*Immunobiology*. PR: Basic Microbiol. II. 2 hr. Discussion of the biological and cellular aspects of immunology. Immunobiology, immunopathology, and cellular immunology receive strong emphasis. This course is designed to complement Biochem. 491.

*Tumor Biology*. II. 3 hr. PR: Biol. 315 or equiv.; consent. A consideration of the molecular and biochemical aspects of viruses which cause tumors and the mechanisms by which they cause cellular transformation.

*Clinical Laboratory Virology*. S. 3 hr. per 5-week session. PR: Consent. Lectures and laboratories on isolation of viruses from clinical specimens. Includes serological methods.
496. *Seminar*. I, II, S. 1 hr. PR: Microbiol. 316 or equiv. Includes the history of microbiology. (Graded as S or U.)
497. *Research*. I, II, S. 1-15 hr. PR: Microbiol. 316 or equiv. Students may enroll more than once. (Graded as S or U.)

## Pathology

Professors Rodman (*Chairman*), Albrink, Anido, Chou, Hales, Morgan, and Stevenson; Clinical Professor Emeritus Ladewig; Associate Professors Rochlani and Lalonde; Clinical Associate Professor Abernathy; Assistant Professors Boyd, Bouquot, Crosby, Evans, Jagannathan, Jenkins, and Shah; Clinical Assistant Professors Caldwell, Condina, Giarritta, Kim, Mastrangelo, Swoyer, and Stinely; Research Associate DeNee.

### Path.

- 128. *Introduction to General Pathology*. I. 2 hr. PR: Enrollment in Dental Hygiene or Physical Therapy. A study of the basic pathologic processes in man.
- 328. *General Pathology*. (For dental students.) I. 6 hr. PR: Anat. 309. General changes in basic pathologic processes and changes evoked in specific organ systems as a basis for understanding clinical disease.
- 338. *Oral Pathology*. (For dental students.) II. 3-4 hr. PR: Enrollment in Dental Hygiene or Dentistry. Application of knowledge gained in Path. 328 to study of specific diseases affecting the oral cavity.
- 350. *Hematology*. 3 hr. PR: Consent.
- 352. *Laboratory Medicine*. (For medical students, second year.) II. 5 hr. PR: Consent. All topics relating to clinical pathology; hematology, fluid and electrolytes, clinical microscopy, serology, and blood banking.
- 353. *Oral Oncology*. (For dental students.) I. 1 hr. PR: Consent; Path. 338. Recognition of benign, malignant, and pre-malignant lesions with emphasis of biopsy, exfoliative cytology, and other clinical diagnostic procedures.
- 354. *General Pathology*. (For medical students, second year.) Yr. 10 hr. PR: Consent.
- 355. *Clinico-Pathologic Correlation Conference*. (For dental students, third year.) II. 1 hr. PR: Consent; Path. 338, 353. Interesting clinical cases are demonstrated grossly, radiographically, and histologically. Diagnosis is established and treatment discussed.
- 356. *Advanced Pathology*. I, II. 3 hr. PR: Path. 328 and 354, and consent. Microscopic and gross specimens from selected autopsies.
- 382. *Clinico-Pathologic Correlation Conference*. (For dental students, fourth year.) I and II. 1-2 hr. PR: Consent; Path. 353, 358. Interesting clinical cases are demonstrated grossly, radiographically and histologically. Diagnosis is established and treatment discussed.
- 401. *Advanced Oral Pathology*. I, II. 1-3 hr. PR: Consent. Advanced seminar and laboratory study of local and systemic disease processes affecting the oral structure.
- 497. *Research*. I, II. 1-15 hr. PR: Consent.

## Pharmacology

Professors Fleming (*Chairman*), Craig, Robinson, Saxe, Stitzel, and Thomas; Associate Professors Azzaro, Cenedella, Graves, Mawhinney, Ramanan, Smith, Van Dyke, and Westfall; Assistant Professors Colasanti and Urquilla.

*Research Areas* — Autonomic pharmacology; autonomic regulation of the cardiovascular system and of smooth muscle; sensitivity to autonomic drugs; electrophysiologic studies of cardiac and smooth muscle; synthesis, storage, release and metabolism of transmitters and adrenal medullary hormones.

Chemotherapy: antimalarial agents, anticancer agents, effects of pharmacological agents on single cell organisms. Biochemical pharmacology: drug metabolism, effects of drugs on lipid and nucleic acid metabolism. Endocrine pharmacology: mechanism of action of steroids, metabolism of sex accessory tissues, relationship of hormones to tumor growth and development. Neuropharmacology: biochemical basis of epilepsy, mechanism of action of anticonvulsant drugs, neuromediators in the central nervous system. Toxicology: metabolism of toxic agents, tolerance to organophosphorus compounds. Electron microscopy; effects of drugs on the ultrastructure of cells.

## Pharmacol.

160. *Pharmacology*. (For undergraduate students in the paramedical sciences.) II. 3 hr. Interactions of clinically useful therapeutic agents with the mammalian system.
242. *Pharmacodynamics and Therapeutics II*. I. 6 hr. (For pharmacy and graduate students.) PR: Pharmacy 240 or consent. Continuation of Pharmacy 240.
360. *Pharmacology*. I. 4 hr. (For dental and graduate students.) PR: Dental student standing or consent. Lecture and laboratory on pharmacologic actions and therapeutic uses of drugs.
363. *Toxicology*. II. (Alternate years.) 3 hr. PR: Consent. Theoretical concepts and general principles of toxicology with special emphasis on biochemical and molecular mechanisms of chemical toxicity.
364. *Advanced Pharmacology*. I. 1-4 hr. PR: Pharmacol. 361 or consent. Offered every third year. Advanced lectures and discussion of general principles of pharmacology including physicochemical properties, absorption, distribution and metabolism of drugs, and drug receptor theory.
365. *Advanced Pharmacology*. I. 1-4 hr. PR: Pharmacol. 361 or consent. Offered every third year. Advanced lectures and discussion of specialized areas of pharmacology including biochemical, endocrine and cardiovascular pharmacology.
366. *Advanced Pharmacology (Laboratory in Drug Evaluation)*. S. 1-3 hr. PR: Consent. Laboratory procedures and demonstrations in assessing drug action.
367. *Advanced Neuropharmacology*. I. 1-4 hr. PR: Pharmacol. 361 or consent. Offered every third year. Advanced lectures on the actions of drugs on the central and peripheral nervous system.
460. *Special Topics in Pharmacology*. I, II, S. 1-6 hr. per sem. Assigned study on an individual basis for advanced students.
461. *Seminar in Pharmacology*. I, II. 1 hr. per sem. PR: Pharmacol. 361 or graduate status in basic medical sciences.
462. *Literature Survey*. I, II. 1 hr. per sem. PR: Graduate status in pharmacology. Current literature pertinent to pharmacology including journals of allied biological sciences.
463. *Preceptorship*. I, II. 1-2 hr. per sem. PR: Pharmacol. 361 and consent. Critical evaluation of preparation and delivery of lectures in specified areas of pharmacology. For advanced graduate students.
497. *Research*. I, II, S. 1-15 hr. per sem.

## Physiology and Biophysics

Professors Wilson (*Chairman*), Gutmann, Marshall, and Moran; Associate Professors Colby, Franz, Gladfelter, Lee, McIntyre, Miles, Millecchia, Sherwood, and Weber; Assistant Professors Brown, Frazer, and M. Morgan; Instructor Hankinson; Lecturer Caldwell.

*Research Areas* — Cellular, membrane transport and electrical properties of excitable tissue; integrative and behavioral functions of the nervous system; regulation and dynamics of the circulation, respiration, endocrine, and electrolyte balance systems; theoretical and experimental biophysics; and biomedical instrumentation.

## Physiol.

141. *Elementary Physiology.* (For undergraduate students in paramedical sciences.) II. 4 hr. PR: College biology and chemistry, or consent. Systematic presentation of basic concepts. 3 lect., 1 lab.
241. *Mechanisms of Body-Function.* I. 4 hr. PR: College chemistry, biology, physics, and algebra or Graduate status and approval. A systematic examination of the homeostatic functions of the human body with emphasis on the physicochemical mechanisms involved. Pathophysiology and clinical correlations are introduced in relation to normal physiology.
248. *Experimental Design.* (For advanced undergraduate and selected graduate students.) II. 3 hr. PR: Consent. Theory and practical experience in design of experiments and processing of physiological data using small laboratory digital computers. 1 lect., 2 lab.
343. *Fundamentals of Physiology.* (For dental and graduate students.) I. 5 hr. PR: College physics, algebra, and chemistry. Analysis of basic facts and concepts relating to cellular processes, organ systems and their control. 3 lect., 1 conf., 1 lab.
344. *Medical Physiology.* (For medical and graduate students.) I. 3 hr. PR: College physics, algebra and chemistry. Analysis of basic facts and concepts relating to cellular processes, organ systems, and their control, with clinical correlations. 1 lect., 1 conf.-lab.
345. *Medical Physiology.* II. (For medical and graduate students.) II. 4 hr. PR: Physiol. 344. Continuation of Physiol. 344. 3 lect., 1 conf.-lab.
346. *Neurophysiology.* (For medical and graduate students.) II. 3 hr. PR: College algebra, physics. Properties of excitable tissues (nerve and muscle), synaptic transmission, reflexes and central nervous system function, and behavior. 2 lect., 1 conf.
347. *Biophysical Analysis.* II. 4 hr. (Alternate years.) PR: Math. 17 and Physiol. 345 or consent. Systems biophysics, method of analysis, and their application in the quantitative study of biological phenomena. 3 lect., 1 conf.-seminar.
399. *Special Topics.* I, II, S. 1-4 hr. PR: Consent. Assigned study designed to develop research skills.
441. *Physiological Methods.* I. 4 hr. PR: Physics 113, 114 or equiv. Theory and application of technics essential to acquisition and processing of physiological data. 2 lect., 2 conf.-lab.
444. *Graduate Seminar.* I, II. 2 hr. PR: Graduate status and consent.
447. *Systems Biophysics.* II. 4 hr. (Alternate years.) PR: Physiol. 347 or consent. Quantitative analysis of physiological regulatory systems. 2 lect., 2 conf.-seminar.
490. *Teaching Practicum.* I, II. 1-3 hr. PR: Consent. Supervised practices in college teaching of physiology. (Graded as S or U.)
491. *Advanced Physiology.* I, II, S. 1-15 hr. PR: Consent. Lecture-conference in: cellular biophysics, neurophysiology, circulation, respiration, acid-base and renal physiology, digestion and energy metabolism, and endocrinology. 3 lect., 3 conf.
497. *Research in Physiology and Biophysics.* I, II, S. 1-15 hr.
498. *Thesis.* I, II, S. 2-4 hr. PR: Consent. (Graded as S or U.)
499. *Graduate Colloquium.* I, II. 1-6 hr. PR: Consent. (Graded as S or U.)



# Health Science Programs At West Virginia University

## School of Dentistry

	<i>Bachelor</i>	<i>Master</i>	<i>Doctorate</i>
Dental Hygiene .....	B.S.		
Dentistry .....			D.D.S.
Orthodontics .....		M.S.	

## School of Medicine

Anatomy .....	M.S.	Ph.D.
Biochemistry .....	M.S.	Ph.D.
Medical Technology .....	B.S.	M.S.
Medicine .....		M.D.
Microbiology .....	M.S.	Ph.D.
Pharmacology .....	M.S.	Ph.D.
Physical Therapy .....	B.S.	
Physiology and Biophysics .....	M.S.	Ph.D.

## School of Nursing

Nursing .....	B.S.	M.S.N.
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## School of Pharmacy

Pharmaceutical Sciences .....	M.S.
Pharmacy .....	B.S.

## University Hospital

Radiologic Technology .....	Certificate
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It is the policy of West Virginia University to provide equal opportunities to all prospective and current members of the student body, faculty, and staff solely on the basis of individual qualifications and merit without regard to race, sex, religion, age, or national origin.

The University also neither affiliates with nor grants recognition to any individual, group, or organization having policies that discriminate on the basis of race, religion, age, or national origin.

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Morgantown, WV 26506

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The university is the nearest thing to a universal institution  
which we now have in the world; an institution designed to  
serve all mankind. . .

—Historian Henry Steele Commager









